

To: Rico Town Council
From: Jon Callender, Principal

CC: Ashton Harrison, Rico Town Manager

Date: 12 May 2004

Re: Review of Rico Town-site Soils VCUP

This memorandum consists of three parts: 1) review of 19 March 2004 VCUP in response to the RFP of 16 April 2004 by Gault Group Inc. (GGI); 2) pro-bono cursory review of START2 Analytical Results Report by US EPA of 9 February 2004, as requested by Rico Town counsel; and 3) summary of telephone communication between Callender and Max Dodson, Assistant Administrator, US EPA Region 8, on 5 May 2004 concerning the Rico VCUP, as authorized by the Rico Town Council.

1. VCUP Review

The following comments relate to the 'Rico Town-site Soils VCUP Application' submitted to the Colorado Department of Public Health and Environment (CDPHE) on 19 March 2004 by Atlantic Richfield Co., Rico Renaissance, LLC, Rico Properties, LLC, and the Town of Rico. The comments generally follow the order of the VCUP.

- 1. Application Status. As discussed by GGI at the Town Council VCUP working meeting on 3 May 2004, GGI does not believe it is necessary for the Town to be a co-applicant in the VCUP in order to achieve recognition as a critical participant in the VCUP program by CDPHE and US EPA. Alternatively, it may be advantageous for the Town to retain its status as an independent third party during the course of the VCUP, ensuring that the applicants and the agencies carry out their responsibilities without conflicts of interest regarding the Town.
- 2. Site size. GGI believes the site to be evaluated is too small. In order for the Town to adequately act as the fiduciary for the Township and its surroundings, the site needs to encompass more than the current Town and immediately adjacent planned areas. There is no reason to suppose that mining impacts are confined to the currently proposed site area. An expanded site assessment would allow the Town to develop more satisfactory and applicable institutional controls and to more accurately predict the size of a local repository, should further clean up be required after the VCUP is completed.
- 3. Phasing. GGI recommends that the VCUP be separated into three phases, as follows:
 - a. Phase I. Site assessment, human health-risk assessment, safety and environmental risk assessment, and alternative option analysis. This approach would give the Town an opportunity to review additional alternatives, including, for example, No-Action;

Institutional Controls Only; Institutional Controls + Clean Up; and Complete Clean Up options rather than a single option of a partial clean up as proposed by the current VCUP. Under this approach, the options would reflect a range of potential soil action levels, so that the Town can evaluate the clean-up level most appropriate to the long-term health, safety and environmental needs of the Town. The current single clean-up option leaves the Town with a set of future unknowns for which only they are responsible.

- b. Phase II. Based on the results of Phase I, and concurrence of the agencies and Town, the first phase of the clean up would focus on any areas that require an emergency response, such as proposed VCUP sites at the Van Winkle mine site and existing residences where the soils contain lead concentrations above the clean-up level established in Phase I. Phase II could likely be completed in late 2004 and early 2005.
- c. Phase III. Any remaining non-emergency clean up required under the Phase I analysis and approved soil action level. This phase could be completed in 2005 or early 2006.
- 4. Additional analysis. In addition to the site health risk assessment, the site should be analyzed for natural and anthropogenic processes that have deposited mine waste at the site. The VCUP assumes that mining-related activities are the only anthropogenic impacts to the site. It is likely that historic human activities such as road building, fill for residential, commercial, retail and other activities, floods and similar runoff events, and other activities may have also distributed mining waste throughout the Town. GGI recognizes that ARCO apparently conducted such an analysis for a part of the area in 1996; this study should be brought current as the site assessment proceeds.
- 5. Geologic setting. The site resides in a complicated geologic environment, which is poorly delineated in the VCUP Application. The bedrock and fill need to be further characterized so that preferred pathways for the migration of mining waste over the past decades can be more clearly identified. In addition, the geology impacts future institutional controls, development, groundwater and surface water flow and so forth.
- 6. Groundwater. Although groundwater is dismissed as an issue in the VCUP, the Town's plans to develop a groundwater source for their water system instead of relying on the current surface water source suggests that groundwater should be taken more seriously and that groundwater flow, water table elevations and post-clean up groundwater monitoring should be a part of the VCUP program and the resulting institutional controls that become the Town's responsibility.
- 7. Soil sampling. GGI believes that the soil sampling protocol is inadequate to accurately portray the distribution of lead in site soils, for the following reasons:
 - a. Surface sampling is inadequate due to the proposed sampling of only the upper one inch of soils and the approach to a composite sample, which will likely dilute hot spots at the sampling sites. GGI recommends that the surface soils samples should sample the upper two inches and that both a composite sample and individual samples should be analyzed for every fifth sampling event. This approach will clarify site variability and produce a better understanding of the range of soil lead concentrations at the various sampling sites.
 - b. Depth sampling is inadequate due to infrequent samples and insufficient depth. Typically depth samples are taken at 0-6, 6-12, 12-18, and 18-24 inch intervals at mining waste sites, with at least one depth sample from each surface sampling composite site. This is

particularly important when only 12 inches of clean soil are contemplated as the remedial response, as the Town then 'owns' the remaining soils that are either not cleaned up or remain at depth, to be later excavated in foundations, infrastructure installation, tree planting and other activities.

- Bioaccessibility samples. The VCUP does not identify the process by which these samples will be identified. This is critical, as both lead concentration and speciation can dramatically affect the analysis of bioaccessibility.
- 9. Proposed remedial response. The proposal to replace contaminated soils with 12 inches of clean soil or equivalent is premature, as a sampling and analysis program has not been completed. GGI believes that the Phase I program discussed above should be completed before any remedial action and institutional controls response are contemplated.
- 10. Revegetation and warranties. The Applicants assume that installing 'rock mulch' or native vegetation will not have a deleterious effect on storm water runoff and erosion. GGI believes that the proposed remedial response should analyze carefully the net impact from the remediation on these processes. In addition, there is no mention of warranties for planting. Typically in these types of remedial actions, at least one growing season is allowed to ensure that all plants 'take.' If soil removals cease at the drip-line of existing trees and shrubs, then these plants should be warranted as well (the removal action often cuts critical roots or otherwise impacts the plants) and a set of clearly defined institutional controls should be given to the Town for their consideration regarding the contaminated soils that are left around these plants (which will die at some future time).
- 11. Repository. One of the most critical components of the clean up has been omitted from the proposal—the identification and (or) planning of a 'local' repository. The VCUP mentions the potential for a repository in the 'vicinity' (not defined), but if the vicinity includes Cortez, Colorado, currently the closest site, then an analysis of the safety and cost issues for using such a repository need to be part of the Phase I (as defined above) study. If the vicinity is in Rico, the site should be identified or a planning process for developing a local site should be a part of the VCUP, and a commitment to building the site should be a part of the Applicant's proposal.

2. US EPA Sampling (START2 program)

A cursory review of the 'Analytical Results Report for Focused Site Inspection' for the Rico-Argentine area by URS Operating Services for US EPA, dated 9 February 2004, yields the following observations:

- The report adequately summarizes the site and provides additional useful data.
- Other metals, which typically follow lead, such as arsenic, cadmium, chromium, cobalt, mercury, silver and zinc, are present at the site. Clean up of soils using lead as the guide will likely remove any hazards produced by these metals in soils.
- The hydrologic system is poorly understood. As the suite of metals described above can also reside in groundwater and surface water, it is likely that more information should be obtained on the hydrogeologic system, particularly groundwater. Arsenic and cadmium have low

MCLs and can be 'bad boys' in the hydrologic system.

- The lead concentrations in soils are highly elevated in only a few areas; additional sampling, and the subsequent remedial response, as proposed in the VCUP, may be less intrusive than previously contemplated.
- UOS has provided a significant new data set, which should be integrated into the existing VCUP information system and discussed by the Town Council before the VCUP sampling and analysis plan is approved. The VCUP includes this intent, but this should be done immediately.

3. Telephone Communication with Max Dodson

I spoke with Assistant Administrator Dodson on Wednesday morning, 5 May 2004, after I received an e-mail from Eric Heil notifying me to proceed. The conversation focused on four major points:

- EPA is completely on board ('shoulder to shoulder') with CDPHE on the VCUP program and supports the Rico VCUP application and the protection inherent in it.
- EPA is in 'no hurry' and is not interested in forcing the clean-up program to proceed until the Town has completed is deliberations on the VCUP. EPA is currently not contemplating a unilateral emergency action.
- EPA will provide any information the Town requests and is highly committed to transparency.
 If communication continues to be an issue, Max is committed to resolving it either in person or through an EPA representative.
- EPA has major problems with transporting waste to Cortez along public roads due to significant public safety issues.

Max was very positive about moving forward on the VCUP, but felt the Town needs to do its appropriate due diligence, which he completely supports.

Please feel free to discuss this with GGI at 970.565.1222; Callender can be reached at 801.599.7789 as well.

Rico VCUP ● Page 4 5/13/2004